



PATENT  
Docket No. 577182000100

**CERTIFICATE OF MAILING BY "EXPRESS MAIL"**

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV 332778829 US, in an envelope addressed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: September 17, 2004

Signature: \_\_\_\_\_

*Tia B. Zimmerman*  
(Tia B. Zimmerman)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of:

Sudhanshu MISRA et al.

Serial No.: 10/810,070

Filing Date: March 25, 2004

For: CUSTOMIZED POLISH PADS FOR  
CHEMICAL MECHANICAL  
PLANARIZATION

Examiner: Not Yet Assigned

Group Art Unit: 3723

**INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98**

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Pursuant to the USPTO notice dated July 11, 2003, waiving the requirement under 37 C.F.R. § 1.98 (a)(2)(i) to provide copies of U.S. Patents and U.S. Published Applications, copies of those references are not submitted. Copies of foreign documents and non-patent literature are submitted herewith. The Examiner is requested to make these documents of record in the application.

This Information Disclosure Statement is submitted:

- ☐ Before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.
- ☒ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.
- ☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.
  - ☐ A fee is required. A check in the amount of \_\_ is enclosed.
  - ☐ A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
  - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.
- ☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.
  - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of \_\_ is enclosed.
  - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a Fee Transmittal form (PTO/SB/17 is attached to this submission in duplicate.)

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for

any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing 577182000100. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: September 17, 2004

Respectfully submitted,

By:   
Robert K. Cerpa  
Registration No. 39,933

Morrison & Foerster LLP  
755 Page Mill Road  
Palo Alto, California 94304-1018  
Telephone: (650) 813-5816  
Facsimile: (650) 494-0792

Form PTO-1449

Docket Number 577182000100

Application Number 10/810,070

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Applicant

Sudhanshu MISRA et al.

Filing Date March 25, 2004

Group Art Unit 3723

Mailing Date September 17, 2004

## U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
	1.	11/01/2001	2001/0036795	Merchant et al.			
	2.	11/01/2001	2001/0036796	Misra et al.			
	3.	12/26/2002	2002/197934	Paik			
	4.	03/20/2003	2003/0054735	Misra et al.			
	5.	02/04/1997	5,599,423	Parker et al.			
	6.	08/12/1997	5,655,951	Meikle et al.			
	7.	11/02/1999	5,975,991	Karlsrud			
	8.	02/29/2000	6,030,488	Izumi et al.			
	9.	06/20/2000	6,077,153	Fujita et al.			
	10.	07/18/2000	6,089,966	Arai et al.			
	11.	04/10/2001	6,214,732	Easter et al.			
	12.	07/10/2001	6,258,231	Easter et al.			
	13.	11/20/2001	6,319,095	Merchant et al.			
	14.	12/11/2001	6,328,633	Misra et al.			
	15.	04/02/2002	6,364,742	Fukuzawa			
	16.	04/02/2002	6,364,744	Merchant et al.			
	17.	04/09/2002	6,368,200	Merchant et al.			
	18.	04/23/2002	6,375,541	Merchant et al.			
	19.	08/20/2002	6,436,830	Merchant et al.			
	20.	08/27/2002	6,439,972	Misra et al.			
	21.	10/01/2002	6,458,016	Merchant et al.			
	22.	10/01/2002	6,458,289	Merchant et al.			
	23.	10/08/2002	6,461,225	Misra et al.			
	24.	07/29/2003	6,599,837	Merchant et al.			
	25.	12/09/2003	6,659,846	Misra et al.			
	26.	01/13/2004	6,676,483	Roberts			

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 577182000100

Application Number 10/810,070

Applicant

Sudhanshu MISRA et al.

Filing Date March 25, 2004

Group Art Unit 3723

Mailing Date September 17, 2004

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO	
	27.	06/03/1998	EP 0 845 328	Europe				
	28.	06/02/1999	EP 0 919 336	Europe				
	29.	12/27/2002	WO 02/102549	WIPO				

## OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
	30.	Boning, D. et al. (April 1999). "Pattern Dependent Modeling for CMP Optimization and Control," <i>Proc. Symposium P: Chemical Mechanical Polishing</i> , pp. 1-13.
	31.	Chen, Y. et al. (June 2000). "Practical Iterated Fill Synthesis for CMP Uniformity," prepared by the Computer Science Departments of UCLA, the University of Virginia, and Georgia State University, 4 pages.
	32.	Fu, G. et al. (2002). "A Model for Wafer Scale Variation of Material Removal Rate in Chemical Mechanical Polishing Based on Viscoelastic Pad Deformation," <i>Journal of Electronic Materials</i> 31(10):1066-1073.
	33.	Gostein, M. et al. (March 2002). "Characterizing and Monitoring Copper CMP Using Nondestructive Optoacoustic Metrology," provided by Micromagazine.com, located at <a href="http://www.micromagazine.com/archive/02/03/gostein.html">http://www.micromagazine.com/archive/02/03/gostein.html</a> , last visited on March 4, 2004, 13 pages.
	34.	Luo, J. et al. (May 2001). "Material Removal Mechanism in Chemical Mechanical Polishing: Theory and Modeling," <i>IEEE Transactions on Semiconductor Manufacturing</i> 14(2):112-133.
	35.	Noh, K. et al. (January 2002). "Mechanics, Mechanisms and Modeling of the Chemical Mechanical Polishing Process," 10 pages.
	36.	Oji, C. et al. (2000). "Wafer Scale Variation of Planarization Length in Chemical Mechanical Polishing," <i>Journal of the Electrochemical Society</i> 147(11):4307-4312.
	37.	Ouma, D. O. et al. (May 2002). "Characterization and Modeling of Oxide Chemical Mechanical Polishing Using Planarization Length and Pattern Density Concepts," <i>IEEE Transactions on Semiconductor Manufacturing</i> 15(2):232-244.
	38.	Philipossian, A. et al. (2003). "Fundamental Tribological and Removal Rate Studies of Inter-Layer Dielectric Chemical Mechanical Planarization," <i>Japan J. Appl. Phys</i> 42(10):6371-6379.
	39.	SKW Associates, Inc. (Date Unknown). "Planarization Length: Concept and Determination in Dielectric CMP Process," 2 pages.

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

<b>Form PTO-1449</b>  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  <i>(Use several sheets if necessary)</i>		Docket Number 577182000100		Application Number 10/810,070	
		Applicant  Sudhanshu MISRA et al.			
		Filing Date March 25, 2004		Group Art Unit 3723	
		Mailing Date September 17, 2004			
	40.	Stine, B. et al. (Feb 1998). "Rapid Characterization and Modeling of Pattern Dependent Variation in Chemical Polishing," <i>IEEE Transactions on Semiconductor Manufacturing</i> 11(1):129-140.			
	41.	Tung, T-L (September 1997). "A Method for Die-Scale Simulation of CMP Planarization," <i>IEEE</i> pp. 65-68.			
EXAMINER:			DATE CONSIDERED:		
EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.					